

IN THE CLAIMS

Please amend the claims as follows:

1 1. (Currently Amended). A photonic crystal structure containing a microcavity structure
2 that is doped with materials that comprise a single EIT atom or a single EIT quantum-dot,
3 and exhibit electro-magnetic induced transparency (EIT) so as to increase the non-linear
4 properties of said photonic crystal systems.

1 2. Canceled.

1 3. (Currently Amended). The microcavity structure of claim [[2]] 1, wherein said
2 materials are doped using a scanning tunnel microscope related techniques.

1 4. (Original). The microcavity structure of claim 1, wherein said materials are doped
2 with a plurality of EIT atoms.

1 5. (Original). The microcavity structure of claim 4, wherein said materials are doped
2 using a scanning tunnel microscope.

1 6. (Original). The microcavity structure of claim 1, wherein said photonic crystal
2 structure is a three dimensional photonic crystal structure.

1 7. (Original). The microcavity structure of claim 1, wherein said photonic crystal
2 structure is a two dimensional photonic crystal structure.

1 8. (Original). The microcavity structure of claim 1, wherein said photonic crystal
2 structure is a multi-layered structure of varying indices.

1 9. (Original) The microcavity structure of claim 8, wherein said multi-layered structure
2 forms a multi-layered film.

1 10. (Withdrawn). A method of forming a microcavity structure comprising:
2 providing a photonic crystal structure that includes a point defect region; and
3 doping said photonic crystal with materials that comprise a single EIT atom or a
4 single EIT quantum-dot, and exhibit electro-magnetic induced transparency (EIT) so as to
5 increase the non-linear properties of said photonic crystal systems.

1 11. (Withdrawn). The method of claim 10, wherein said materials are doped with one
2 EIT atom.

1 12. (Withdrawn). The method of claim 11, wherein said materials are doped using a
2 scanning tunnel microscope related techniques.

1 13. (Withdrawn). The method of claim 10, wherein said materials are doped with a
2 plurality of EIT atoms.

1 14. (Withdrawn). The method of claim 13, wherein said materials are doped using a
2 scanning tunnel microscope related techniques.

1 15. (Withdrawn). The method of claim 10, wherein said photonic crystal structure is a
2 three dimensional photonic crystal structure.

1 16. (Withdrawn). The method of claim 10, wherein said photonic crystal structure is a
2 two dimensional photonic crystal structure.

1 17. (Withdrawn). The method of claim 10, wherein said photonic crystal structure is a
2 multi-layered structure of varying indices.

1 18. (Withdrawn). The method of claim 17, wherein said multi-layered structure forms a
2 multi-layered film.